UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,630	07/31/2001	Mark A. Sanner	PC10825A	6400

23913 7590 07/25/2003

PFIZER INC
150 EAST 42ND STREET
5TH FLOOR - STOP 49
NEW YORK, NY 10017-5612

EXAMINER	
ANDERSON, REBECCA L	
ART UNIT	**PAPER NUMBER**
1626	

DATE MAILED: 07/25/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/919,630	Applicant(s) SANNER ET AL.	
	Examiner Rebecca L Anderson	Art Unit 1626	

-- Th MAILING DATE of this communication app ars on th cover she t with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,12-14,16-18,20-30,32 and 33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-8,14,16 and 17* is/are allowed.

6)☒ Claim(s) *21-30,32 and 33* is/are rejected.

7)☒ Claim(s) *12,13,18 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *12* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claims 1-8, 12-14, 16-18, 20-30, 32 and 33 are currently pending in the instant application. Claims 9-11, 15, 19, 31 and 34-57 have been cancelled. Claims 1-8, 14, 16 and 17 appear allowable over the prior art of record. Claims 21-30, 32 and 33 are rejected and claims 12, 13, 18 and 20 are objected.

Response to Amendment

In response to the office action mailed 5 November 2002, applicants have amended claims 1, 7, 12, 16, 18 and 29 to cancel the non-elected subject matter from these claims and to make the pharmaceutical composition claims and method claims within the same scope of the instant compound claims. Therefore, the current method claims 21-30, 32 and 33 are rejoined with the instant elected compound claims and the restriction requirement between Invention I and III is withdrawn since applicant has amended claims 17-20 (invention III) to be of the same scope as the compounds of invention I.

Allowable Subject Matter

Claims 1-8, 14, 16 and 17 appear allowable over the prior art of record. The closest prior art is that of US 6,150352 which discloses the compound of example 4jj, column 49 wherein the equivalent to applicants R1 is methyl instead of the instantly claimed carbocyclic groups for R1.

Claim Objections

Claims 12 and 13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 12 states wherein R4 is quinolyl optionally substituted. However, this is not a further limitation of the parent claim 1 wherein R4 is quinolyl optionally substituted. It is suggested that claim 12 be cancelled and claim 13 be made dependent on claim 1.

Claim(s)18 and 20 is/are objected to for being substantial duplicates of claim 17. When two claims in an application are duplicates, or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to reject the other as being a substantial duplicate of the allowed claim. M.P.E.P. 706.03(k). Claims 17, 18 and 20 are all pharmaceutical compositions of the compound of claim 1 and therefore, claims 18 and 20 are considered duplicates of claim 17 because the intended use of the pharmaceutical composition carries no patentable weight. It is suggested that applicant cancel claims 18 and 20.

Claims 24, 25 and 26 are objected to for being substantial duplicates of claims 21, 22 and 23 respectively. When two claims in an application are duplicates, or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to reject the other as being a substantial duplicate of the allowed claim. Claims 24, 25 and 26 are all method claims for the treatment of abnormal cell growth with the compound of claim 1 and are therefore duplicates of claims 21-23 which are also method claims for the treatment of abnormal cell growth with the compound of claim 1. It is suggested that claims 24-26 be cancelled.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 21-30, 32 and 33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In *In re Wands*, 8 USPQ2d 1400 (1988), factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. § 112, first paragraph, have been described. They are:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the amount of direction or guidance present,
5. the presence or absence of working examples,
6. the breadth of the claims,
7. the quantity of experimentation needed, and
8. the level of the skill in the art.

The nature of the invention

The nature of the invention in claims 21-30, 32 and 33 is the treatment of a disease or condition comprising abnormal cell growth in a mammal by administering a compound of claim 1 (claims 21-26), the treatment of a neurodegenerative disease or condition in a mammal by administering a compound of claim 1 (claims 27-28), the treatment of a desease or condition which is effected or facilitated by altering dopamine

mediated neruotransmission in a mammal by administering a compound of claim 1 (claims 29-30), the treatment of male fertility, diabetes mellitus, impaired glucose tolerance, metabolic syndrome, polycystic ovary syndrome, adipogenesis, myogenesis, acute carcopenia, sepsis, hair loss and immunodeficiency by administering to a mammal the compound of claim 1 (claim 32) and a method for inhibiting GSK-3 in a mammal by administering a compound of claim 1 (claim 33).

The state of the prior art and the predictability or lack thereof in the art

The state of the prior art is that the treatment of abnormal cell growth (including the treatment of any cancer), the treatment of neurodegenerative diseases (including Alzheimer's disease), the treatment of diseases effected by altering dopamine mediated neurotransmission (including Parkinson's disease), the treatment of diseases such as immunodeficiency and the inhibition of GSK-3, which exists in two isoforms, is highly unpredictable. It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. In re Fisher, 427 F.2d 833, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. In the instant case, the instant claimed invention is highly unpredictable since one skilled in the art would recognize that there is no one compound capable of treating, for example, any type of cancer. In regards to the inhibition of the specific isoforms of GSK-3 it is known in the prior art, as can be seen on page 46 of the instant specification, that the specific activity of a compound for the inhibition of GSK-3 needs to be determined by either cell-free or cell-based assays.

Hence, in the absence of a showing of correlation between all the diseases claimed as capable of treatment by the compound of claim 1 and the absence of any examples as to how to treat any of the claimed diseases or conditions and the absence of any specific examples as to an assay of the inhibition of GSK-3 and any specific IC 50's, one of skill in the art is unable to fully predict possible results from the administration of the compound of claim 1 due to the unpredictability of the treatment of all of the claimed diseases and the inhibition of GSK-3.

The nature of pharmaceutical arts is that it involves screening *in vitro* and *in vivo* to determine which compounds exhibit the desired pharmacological activities. There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any therapeutic regimen on its face.

The amount of direction or guidance present and the presence or absence of working examples

The only direction present in the instant specification is a few examples on pages 46-47 as to how an assay for the inhibition of GSK-3, cdk5 or cdk2 could be performed and a blanket statement of unspecific IC50's for the example compounds. There are no specific examples, in vitro or in vivo, for the treatment of any of the claimed diseases, nor is there any specific example to an assay of the claimed compound for the inhibition of GSK-3. Also, the compounds which are discloses in the specification have no pharmacological data regarding the treatment of any other disease besides the rejection of an organ transplantation and have no data on the possible treatment of NO-mediated

diseases that require the promotion of NO. Also, the specification fails to provide working examples as to how the listed diseases can be treated by the administration of the compounds as found in claim 1 or any working examples as to how GSK-3 can be inhibited by the administration of the compounds of claim 1.

The breadth of the claims

The breadth of the claims is that the compound of claim 1 can treat inhibit GSK-3, treat any abnormal cell growth, neurodegenerative disease and any disease mediated by dopamine mediated neurotransmission.

The quantity of experimentation needed

The quantity of experimentation needed is undue experimentation. One of skill in the art would need to determine by in vivo and in vitro testing which claimed diseases would benefit by the administration of which compounds of claim 1 and would furthermore need to do assays on the compounds of claim 1 in order to determine whether the compounds inhibit GSK-3

The level of the skill in the art

The level of skill in the art is high. However, due to the unpredictability in the pharmaceutical art, it is noted that each embodiment of the invention is required to be individually assessed for physiological activity by in vitro and in vivo screening to determine which compounds exhibit the desired pharmacological activity and which diseases would benefit from this activity.

Thus, the specification fails to provide sufficient support of the broad use of the compound of the claim 1 for the treatment of the claimed diseases and the inhibition of GSK-3. As a result necessitating one of skill to perform an exhaustive search for which

diseases can be treated by the compound of claim 1 in order to practice the claimed invention and which compounds of claim 1 can inhibit GSK-3.

Genentech Inc. v. Novo Nordisk A/S (CA FC) 42 USPQ2d 1001 , states that " a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the Wands factors and In re Fisher (CCPA 1970) discussed above, to practice the claimed invention herein, a person of skill in the art would have to engage in undue experimentation to test which diseases can be treated by the compound encompassed in the instant claims and which compounds can inhibit GSK-3, with no assurance of success.

This rejection can be overcome deleting claims 21-30, 32 and 33..

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to

whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 32 recites the broad recitations "hair loss" and the claim also recites "hair thinning" and "balding" which are the narrower statements of the range/limitation. It is suggested that claim 32 be amended to include only one, "hair loss", "hair thinning" or "balding".

Regarding claim 28 and 32 the phrase "for example" as found on line 4 of claim 28 and line 4 of claim 32 renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). It is suggested that the language "for example" and the language following "for example" be deleted from the claim.

Regarding claim 30 the phrase "such as" as found on line 9 renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). It is suggested that the language "such as" and the language following the phrase be deleted.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rebecca L. Anderson whose telephone number is (703) 605-1157. Mrs. Anderson can normally be reached Monday through Friday 7:00AM to 3:30PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Joseph McKane, can be reached at (703) 308-4537.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone numbers are (703) 308-1235 and (703) 308-0196.

A facsimile center has been established. The hours of operation are Monday through Friday, 8:45AM to 4:45PM. The telecopier numbers for accessing the facsimile machine are (703) 308-4242, (703) 305-3592, and (703) 305-3014.

Rebecca Anderson
Patent Examiner
Art Unit 1626, Group 1620
Technology Center 1600

DEBORAH C. LAMBKIN
PRIMARY EXAMINER

Joseph McKane
Supervisory Patent Examiner
Art Unit 1626, Group 1620
Technology Center 1600